

10/ 522096

Sequence listing
SEQUENCE LISTING

DT01 Rec'd PCT/PT 24 JAN 2005

<110> Ehrhardt, Thomas
Sonnewald, Uwe
Bornke, Frederik
Chen, Shuai

<120> Sucrose-6-Phosphate Phosphatase as Target for Herbicides

<130> 532622010200

<140> Not yet assigned

<141> 2005-01-24

<160> 19

<170> PatentIn version 3.1

<210> 1

<211> 1278

<212> DNA

<213> Nicotiana tabacum

<220>

<221> CDS

<222> (1)..(1275)

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gac	cat	aca	atg	gta	gat	cat	cat	gat	gcc	gag	aac	ctt	tct	ctg	ctt	96
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Sequence listing

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Sequence listing

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Ile Trp Val Asp Gln Val Leu Pro Val Gln Val Gly Ser Asp Ser Trp	
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Leu Val Ser Phe Lys Lys Trp Glu Leu Ser Gly Glu Asp Arg Arg Cys	
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Cys Ile Thr Thr Val Leu Leu Ser Ser Lys Asn Lys Thr Val Ala Asp	
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gga ctc act tgg acc cac gta cat cag aca tgg ctg aat gga gct gca	1248
Gly Leu Thr Trp Thr His Val His Gln Thr Trp Leu Asn Gly Ala Ala	
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Val Phe Ser Thr Gly Arg Ser Pro Thr Leu Tyr Lys Glu Leu Arg Lys
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Glu Lys Pro Met Leu Thr Pro Asp Ile Thr Ile Met Ser Val Gly Thr
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Glu Ile Thr Tyr Gly Asn Ser Val Val Pro Asp Asp Gly Trp Glu Ala

Sequence listing
90

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95

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Lys Phe Pro Glu Leu Thr Leu Gln Ser Glu Thr Glu Gln Arg Pro His
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Lys Val Ser Phe Tyr Val Gln Lys Asp Lys Ala Gln Asp Ile Met Lys
130 135 140

Thr Leu Ser Lys Arg Phe Glu Glu Arg Gly Leu Asp Val Lys Ile Ile
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Tyr Ser Gly Gly Met Asp Leu Asp Ile Leu Pro Gln Gly Ala Gly Lys
165 170 175

Gly Gln Ala Leu Ala Tyr Leu Leu Lys Lys Leu Lys Ser Glu Gly Lys
180 185 190

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210 215 220

Glu Glu Leu Leu Gln Trp His Ala Ala Asn Ala Lys Asn Asn Pro Lys
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Val Ile His Ala Thr Glu Arg Cys Ala Ala Gly Ile Ile Gln Ala Ile
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Gly His Ser Asn Leu Gly Pro Ser Thr Ser Pro Arg Asp Val Met Asp
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Leu Ser Asp Cys Lys Met Glu Asn Phe Val Pro Ala Tyr Glu Val Val
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Thr Phe Val His Pro Ser Gly Val Glu Lys Ser Leu Gln Glu Cys Val
325 330 335

Sequence listing

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Leu Val Ser Phe Lys Lys Trp Glu Leu Ser Gly Glu Asp Arg Arg Cys
370 375 380

Cys Ile Thr Thr Val Leu Leu Ser Ser Lys Asn Lys Thr Val Ala Asp
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Gly Leu Thr Trp Thr His Val His Gln Thr Trp Leu Asn Gly Ala Ala
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Ala Ser Asp Ser Ala Ser Trp Phe Phe
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gtg	ttc	tca	act	ggg	aga	tca	cct	acc	ctt	tac	aag	gag	ttg	aga	aaa	192
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Sequence listing																
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aaa Lys	ttt Phe	cct Pro 115	gaa Glu	ctc Leu	acc Thr	ctt Leu	cag Gln 120	tca Ser	gaa Glu	aca Thr	gag Glu	cag Gln 125	cga Arg	cca Pro	cac His	384
aag Lys	gtc Val 130	agt Ser	ttc Phe	tat Tyr	gtt Val	cag Gln 135	aaa Lys	gac Asp	aag Lys	gct Ala	caa Gln 140	gat Asp	ata Ile	acg Thr	gga Gly	432
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Sequence listing

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Arg	Phe	Asn	Ala	Leu	Trp	Glu	Ala	Asn	Tyr	Arg	Glu	Asn	Ser	Leu	Leu	
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Sequence listing

Phe Leu Asn Asp₁₀₀ Lys Trp Asp Arg Lys₁₀₅ Ile Val Thr Glu₁₁₀ Thr Ser
Lys Phe Pro₁₁₅ Glu Leu Thr Leu Gln₁₂₀ Ser Glu Thr Glu Gln₁₂₅ Arg Pro His
Lys Val₁₃₀ Ser Phe Tyr Val Gln₁₃₅ Lys Asp Lys Ala Gln₁₄₀ Asp Ile Thr Gly
Thr₁₄₅ Leu Ser Lys Arg Leu₁₅₀ Glu Glu Arg Gly Leu₁₅₅ Asp Val Lys Ile Ile₁₆₀
Tyr Ser Gly Gly Met₁₆₅ Asp Leu Asp Ile Leu₁₇₀ Pro Gln Gly Ala Gly₁₇₅ Lys
Gly Arg Ala Leu₁₈₀ Ala Tyr Leu Leu Lys₁₈₅ Lys Leu Lys Ser Glu₁₉₀ Gly Lys
Leu Pro Asn₁₉₅ Asn Thr Leu Ala Cys₂₀₀ Gly Asp Ser Gly Asn₂₀₅ Asp Ala Glu
Leu Phe₂₁₀ Ser Ile Pro Asp Val₂₁₅ Tyr Gly Val Met Val₂₂₀ Ala Asn Ala Gln
Glu₂₂₅ Glu Leu Leu Gln Trp₂₃₀ Arg Ala Ala Asn Ala₂₃₅ Lys Asp Ser Pro Lys₂₄₀
Val Ile His Ala Thr₂₄₅ Glu Arg Cys Ala Ala₂₅₀ Gly Ile Ile Gln Ala₂₅₅ Ile
Gly His Phe Asn₂₆₀ Leu Gly Pro Asn Thr₂₆₅ Ser Pro Arg Asp Val₂₇₀ Thr Asp
Met Ser Asp₂₇₅ Cys Lys Met Glu Asn₂₈₀ Phe Val Pro Ala Tyr₂₈₅ Glu Val Val
Lys Phe Tyr Leu Phe Phe Glu₂₉₅ Lys Trp Arg Arg Gly₃₀₀ Glu Ile Glu Asn
Ser₃₀₅ Asp Leu His Leu Ser₃₁₀ Asn Leu Lys Ala Val₃₁₅ Cys Arg Pro Ser Gly₃₂₀
Thr Phe Val His Pro₃₂₅ Ser Gly Val Glu Lys₃₃₀ Tyr Leu Glu Asp Cys₃₃₅ Ile
Asn Thr Leu Arg₃₄₀ Thr Cys His Gly Asp₃₄₅ Lys Gln Gly Lys Gln₃₅₀ Phe Arg

Sequence listing

Ile Trp Val Asp Leu Val Leu Pro Thr Gln Val Gly Ser Asp Ser Trp
355 360 365

Leu Val Ser Phe Lys Lys Trp Glu Leu Cys Gly Glu Glu Arg Gln Cys
370 375 380

Cys Ile Thr Thr Val Leu Leu Ser Ser Lys Asn Val Thr Val Ala Asp
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Ala Ser Asp Ser Ala Ser Trp Phe Phe
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Asp Leu Asp His Thr Met Val Asp His His Asp Ser Glu Asn Leu Ser
15 20 25 30

ctg ctt agg ttc aat gct tta tgg gaa gcc aat tat cgt gat aac tct 207
Leu Leu Arg Phe Asn Ala Leu Trp Glu Ala Asn Tyr Arg Asp Asn Ser
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Arg Lys Glu Lys Pro Met Leu Thr Pro Asp Ile Thr Ile Met Ser Val
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cca cac aag gtc agt ttc tat gtt cag aaa gag aaa gct caa gat ata Pro His Lys Val Ser Phe Tyr Val Gln Lys Glu Lys Ala Gln Asp Ile 130 135 140			495
atg aaa act ctt tcc aag cgc ttg gaa gaa cgt ggg ctg gat gtc aaa Met Lys Thr Leu Ser Lys Arg Leu Glu Glu Arg Gly Leu Asp Val Lys 145 150 155			543
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ggc aaa gga caa gca ctt gca tat ctg ctt aag aaa ctg aag agc gag Gly Lys Gly Gln Ala Leu Ala Tyr Leu Leu Lys Lys Leu Lys Ser Glu 175 180 185 190			639
gga aaa tta cca agc aac acc ctt gcc tgc ggc gac tcc ggg aat gac Gly Lys Leu Pro Ser Asn Thr Leu Ala Cys Gly Asp Ser Gly Asn Asp 195 200 205			687
gct gaa tta ttc agt atc cca gat gtg tat ggt gta atg gta gct aat Ala Glu Leu Phe Ser Ile Pro Asp Val Tyr Gly Val Met Val Ala Asn 210 215 220			735
gcg cag aag gaa tta ctg cag tgg cat gct gca aat gca aaa aat aat Ala Gln Lys Glu Leu Leu Gln Trp His Ala Ala Asn Ala Lys Asn Asn 225 230 235			783
ccc aaa gta att cat gca tca gag agg tgt gcc gcc ggt atc ata caa Pro Lys Val Ile His Ala Ser Glu Arg Cys Ala Ala Gly Ile Ile Gln 240 245 250			831
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Sequence listing

Ser	Gly	Thr	Phe	Val	His	Pro	Ser	Gly	Val	Glu	Lys	Ser	Leu	Gln	Glu	
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	400					405					410					
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Asp	Ala	Ala	Ser	Asp	Ser	Ala	Thr	Trp	Phe	Phe						
415					420					425						
ttaactctga	aaattccgca	ccccttttac	cagttcacac	ccagaataaa	cacaacatac											1424
aaactatagt	tgataatcaa	tgtattaact	ttctccttct	ttgataatca	atgtattgcc											1484
atctaaacca	gtgaagatgg	ctttatcttt	tgtgtagtat	aaagaattat	attagtatca											1544
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<212> PRT

<213> Solanum tuberosum

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Asp	His	Thr	Met	Val	Asp	His	His	Asp	Ser	Glu	Asn	Leu	Ser	Leu	Leu
			20					25					30		

Arg	Phe	Asn	Ala	Leu	Trp	Glu	Ala	Asn	Tyr	Arg	Asp	Asn	Ser	Leu	Leu
		35					40					45			

Val	Phe	Ser	Thr	Gly	Arg	Ser	Pro	Thr	Leu	Tyr	Lys	Glu	Leu	Arg	Lys

Sequence listing
60

50

55

Glu Lys Pro Met Leu Thr Pro Asp Ile Thr Ile Met Ser Val Gly Thr
65 70 75 80

Glu Ile Thr Tyr Gly Asn Ala Met Val Pro Asp Asp Gly Trp Glu Thr
85 90 95

Phe Leu Asn Asn Lys Trp Asp Arg Lys Ile Val Thr Glu Glu Thr Ser
100 105 110

Lys Phe Pro Glu Leu Ser Leu Gln Ser Glu Thr Glu Gln Arg Pro His
115 120 125

Lys Val Ser Phe Tyr Val Gln Lys Glu Lys Ala Gln Asp Ile Met Lys
130 135 140

Thr Leu Ser Lys Arg Leu Glu Glu Arg Gly Leu Asp Val Lys Ile Ile
145 150 155 160

Tyr Ser Gly Gly Met Asp Leu Asp Ile Leu Pro Gln Gly Ala Gly Lys
165 170 175

Gly Gln Ala Leu Ala Tyr Leu Leu Lys Lys Leu Lys Ser Glu Gly Lys
180 185 190

Leu Pro Ser Asn Thr Leu Ala Cys Gly Asp Ser Gly Asn Asp Ala Glu
195 200 205

Leu Phe Ser Ile Pro Asp Val Tyr Gly Val Met Val Ala Asn Ala Gln
210 215 220

Lys Glu Leu Leu Gln Trp His Ala Ala Asn Ala Lys Asn Asn Pro Lys
225 230 235 240

Val Ile His Ala Ser Glu Arg Cys Ala Ala Gly Ile Ile Gln Ala Ile
245 250 255

Gly His Phe Lys Leu Gly Pro Ser Thr Ser Pro Arg Asp Val Thr Asp
260 265 270

Leu Ser Asp Cys Lys Met Asp Asn Phe Val Pro Ala Tyr Glu Val Val
275 280 285

Lys Phe Tyr Leu Phe Phe Glu Lys Trp Arg Arg Gly Glu Ile Glu His
290 295 300

Sequence listing

Ser Glu His Tyr Leu Pro Asn Leu Lys Ala Val Cys Ile Pro Ser Gly
305 310 315 320

Thr Phe Val His Pro Ser Gly Val Glu Lys Ser Leu Gln Glu Cys Val
325 330 335

Thr Ser Phe Gly Thr Cys His Ala Asp Lys Gln Gly Lys Gln Tyr Arg
340 345 350

Val Trp Val Asp Gln Val Leu Pro Ser Gln Val Gly Ser Asp Ser Trp
355 360 365

Leu Val Ser Phe Lys Lys Trp Glu Leu Ser Gly Glu Asp Met Arg Cys
370 375 380

Cys Ile Thr Thr Val Leu Leu Ser Ser Lys Asn Lys Thr Val Ala Asp
385 390 395 400

Gly Leu Thr Trp Thr His Val His Gln Thr Trp Leu His Gly Asp Ala
405 410 415

Ala Ser Asp Ser Ala Thr Trp Phe Phe
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<211> 199

<212> DNA

<213> Solanum tuberosum

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Sequence listing

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<212> DNA

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<223> Primer

<400> 9

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47

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Sequence listing

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<223> Primer

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<223> Primer

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28

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27

<210> 15

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<212> DNA

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Sequence listing

<223> Primer

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<212> DNA

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<223> Primer

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atggcagacg gtgaggatat tca

23

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<223> Primer

<400> 17

gcctttgcaa tccacatctg ttg

23

<210> 18

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<212> DNA

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Sequence listing

<211> 33

<212> DNA

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<220>

<223> Primer

<400> 19

gtcgacctaa aagaaccagg acgcggagtc act

33